DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-026756
Date Inspected: 22-Nov-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

CWI Name: Bernie Docena

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☐ No	☑ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS OBG

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At OBG 14E-PP126.7-E4.2 vent hole infill plate to top deck plate inside, ABF welder Rick Clayborn was observed performing 4G Shielded Metal Arc Welding (SMAW) back welding fill pass to cover pass on the infill plate to top deck plate butt joint. The welder was noted using 1/8” diameter E7018H4R implementing Welding Procedure Specification (WPS) ABF-WPS-D15-1110A Rev.1 for the Seismic Performance Critical Member (SPCM) butt joint. Prior back welding, ABF QC Bernie Docena was observed performing Magnetic Particle Testing (MT) on the ground surface of the back gouging with positive result. During welding, ABF QC Bernie Docena was noted monitoring the welder’s welding parameters with measured working current of 130 amperes on the 1/8” diameter E7018H4R electrode. The welder was noted preheating the plates to more than 150°F using propylene gas torch prior welding. During the shift, cover pass welding on the bottom side location of the butt joint was completed and the welder has moved to other vent hole 14E-PP126.7-E5 and performing back welding on the joint when he was called and did some modification on the cable access platform.

At OBG 14E-PP125-E3-#3 and #4 lifting lug hole infill plates to top deck plate inside, ABF welder Salvador Sandoval was observed performing 4G Shielded Metal Arc Welding (SMAW) back welding fill pass to cover pass on the infill plate to top deck plate butt joints. The welder was noted using 1/8” diameter E7018H4R implementing Welding Procedure Specification (WPS) ABF-WPS-D15-1110A Rev.1 for the Seismic Performance Critical Member (SPCM) butt joint. Prior back welding, ABF QC Bernie Docena was observed performing Magnetic

Particle Testing (MT) on the ground surface of the back gouging with positive result. During welding, ABF QC Bernie Docena was noted monitoring the welder's welding parameters with measured working current of 125 amperes on the 1/8" diameter E7018H4R electrode. The welder was noted preheating the plates to more than 150°F using propylene gas torch prior welding. During the shift, cover pass welding on the bottom side location of the two butt joints was completed and the welder has moved to other lifting lug holes #1 and #2 of same location. The welder performed carbon arc gouging and ground smooth the gouged surface.

At OBG 13E/14E vertical plate 'I' outside, QA randomly observed ABF personnel Wai Kitlai and Han Wen Yu continue to perform preparation for the back welding of the vertical plate. The welders were noted putting in place plywood instead of the tarp for wind and rain protection during welding. The placement of the protection took longer than expected so the welders were not able to perform FCAW-G welding today.

At OBG 13E/14E bottom plate 'D2' outside, QA randomly observed ABF personnel Jin Pei Wang continuing to perform plasma arc gouging on the backing bar removal of the non-SPCM splice butt joint. The welder was using an Esab plasma arc gouging machine that has the nozzle holder attached to a Bug-o track. Gouging of the backing bar was not completed today and should continue tomorrow.

QA randomly observed ABF/JV qualified welder James Zhen perform CJP groove back welding fill pass on Orthotropic Box Girder (OBG) 13E/14E vertical plate 'I' outside. The welder was observed welding in the 3G (vertical) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3110-3. The Seismic Performance Critical Member (SPCM) joint being welded has the backing bar gouged using the Esab Plasma Arc machine and was ground smooth. The gouged and ground splice butt joint was also Non Destructive Testing (NDT) tested using the Magnetic Particle Testing (MT). The splice joint was continuously preheated to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blankets located on top of the plate prior welding and maintained by moving the heater blanket at the side of the plate being welded during welding. The vicinity was properly protected from wind. During welding, ABF Quality Control (QC) Bernie Docena was noted monitoring the welding parameters of the welder. At the end of the shift, fill pass welding was still continuing and should remain tomorrow. The welder has held the preheat of more than 200 degrees Fahrenheit for three (3) hours after welding as required.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT/MT of the Complete Joint Penetration (CJP) welding of three (3) vent hole infill plates to top deck plate butt joints. The QA verification was performed to verify that the welding and the VT/MT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

1. OBG 14E-PP126.2-E2.4 vent hole infill plate to deck plate outside - QA VT/MT verified
2. OBG 14E-PP126.7-E2.5 vent hole infill plate to deck plate outside - QA VT/MT verified
3. OBG 14E-PP126.2-E2.6 vent hole infill plate to deck plate outside - QA VT/MT verified

This QA Inspector verbally informed QA SPCM Lead Inspector, Daniel Reyes, of the issues noted in this report for compliance therefore for further details of issues of significance see QA SPCM Lead Inspector, Daniel Reyes, Daily Inspection Report (6031) for this date.

WELDING INSPECTION REPORT

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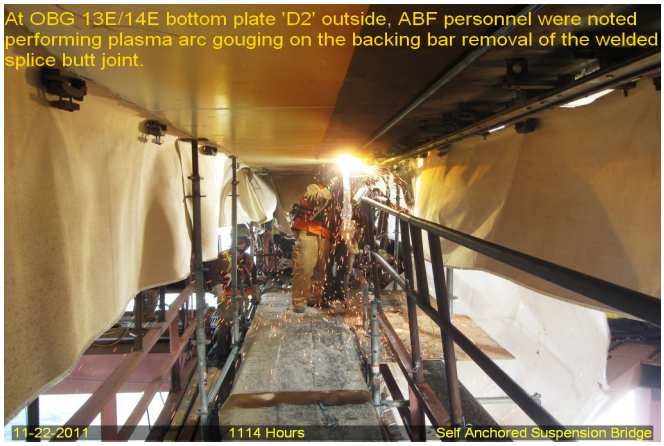

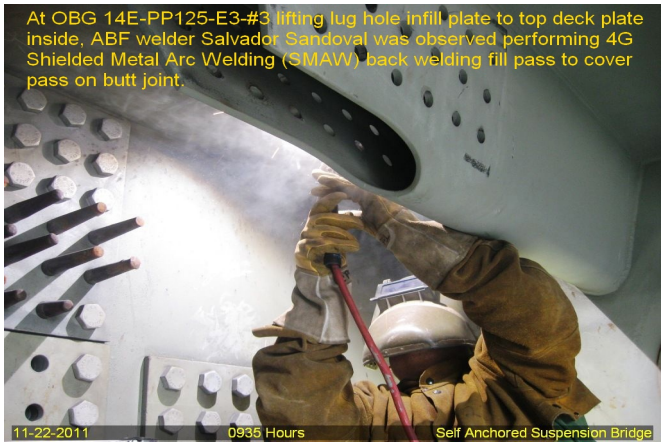

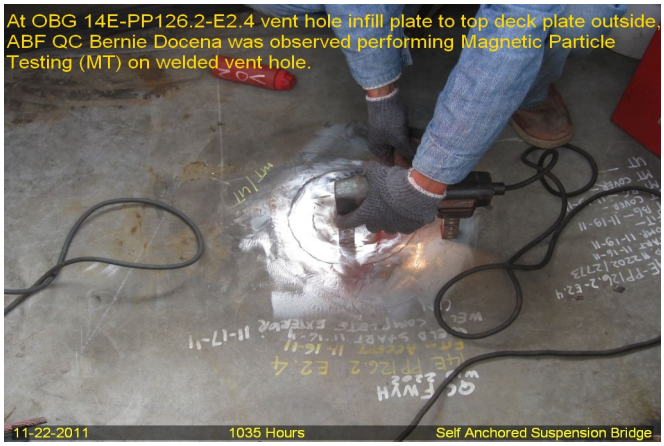

Summary of Conversations:

No significant conversation ocurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer